

## THE DYSGENIC EFFECTS OF VENEREAL DISEASES.

IN the October number of last year of this REVIEW, a short account was given of the part which the Eugenics Education Society had played in assisting in the campaign against venereal disease, and this may have led some of our readers to enquire as to the extent to which these diseases do in fact produce dysgenic effects. Before discussing this subject, it may be as well to point out that some reforms, though they would unquestionably benefit the individuals composing our own generation, would nevertheless injuriously affect "the racial qualities of future generations," and would therefore not be eugenic in their tendencies. There may, in fact, in some cases be a conflict between those who are demanding reforms without reference to eugenic considerations and those who are striving solely for eugenic benefits. As regards venereal diseases, however, no such conflict can arise; for the immediate evils which they produce are immense and unquestioned, whilst as to the future, no one, not even a lunatic, has yet been found to suggest that our descendants in the distant future will benefit by the harm and suffering thus caused to-day. We have no need to seek for eugenic arguments in order to strengthen us in our determination to combat the spread of venereal diseases with our utmost vigour; and we should, moreover, always bear in mind that, of all the many sources of error in the past, there have been none more fruitful than the search for arguments in order to further a predetermined policy.

We must, therefore, enquire into the eugenic consequences of venereal diseases without any ulterior motives in our minds. Now it is in the first place to be noted that whether or not we should include certain evil results of venereal diseases within the scope of an enquiry having reference solely to their eugenic results, will depend on the meaning which we choose to attach to the words we use, and consequently that we may be embarking in such an enquiry on a controversy which is to a consider-

able extent verbal or academic in its character. If the phrase "the racial qualities of future generations" is held to cover the harmful results in the next generation of congenital syphilis, then the stamping out of the cause of these evils, namely, acquired syphilis in this generation, is *ex hypothesi* a eugenic problem of the highest importance. Both for practical and sentimental reasons, many of us would, however, prefer to make the word "eugenics" cover no more than that particular science or practice which Sir Francis Galton had in his mind when he coined that term; and no careful student of his works can doubt for a moment that what he was striving to attain was the legitimate utilisation of all those forces, whatever they may be, which have been the cause in the past of evolutionary progress in the animal world. Every individual is the result of the action of his surroundings during his life on a certain inborn foundation with which he was originally endowed; this inherent basis, which was transmitted to him from his remote simian ancestry by natural inheritance through countless generations, was subject to slow progressive changes in one direction or another as the generations succeeded each other; and it was these slow changes which Galton had in his mind when he spoke of evolution. Hence in order to decide as to the purely "eugenic" effects of venereal diseases in the Galtonian meaning of that word, we must leave out of account all the transient and acquired effects of these diseases, and merely have regard to any progressive changes in the inborn character of the people which may be due to this scourge. Adopting this view of the meaning which should be attached to the word "eugenics," then it should be frankly admitted that differences of opinion do exist as to the eugenic effects of venereal diseases; though they are not of such a nature as in the slightest degree to shake our common determination to attack this grave national evil with all our forces.

Though it is now generally admitted that selection has been the most potent factor in evolution, yet we must never overlook the possible effects of other factors, amongst which must be included those many influences which have been described as racial poisons. There are many authorities, whose opinions

are worthy of respect, who believe that the venereally diseased parent not only produces terribly damaged offspring, but also passes on by means of natural inheritance a stream of life in a damaged condition to his descendants for an indefinite number of generations, or in other words, that venereal disease is a racial poison of the worst type. Now as to syphilis, according to the Report of the Royal Commission, more than 10 per cent. of the inhabitants of our great towns suffer from this disease either in its acquired or congenital form; and if this disease is acting as a racial poison, it is therefore a poison which is now being widely spread throughout the nation. If one in ten of all our ancestry had in truth suffered from this disease, then (assuming no correlation) not more than about one in seventy of the individuals composing this generation could claim not to have had a syphilitic ancestor in the course of the last five generations, a ratio which would increase rapidly as the more remote ancestry were taken into consideration. The fact that syphilis both kills and sterilises, however, makes this calculation afford a greatly exaggerated view of the frequency of this ancestral taint; and those who believe that venereal diseases may injuriously affect the inborn qualities of all the descendants of the diseased for an indefinite number of generations must hold that these lethal and sterilising effects are a blessing in disguise on account of their influence in stamping out such harmful hereditary effects. The point to which attention is here drawn is, however, that since syphilis seldom kills and often does not sterilise, it follows that if the taint of this disease does not die out in time, it has already spread through practically the whole nation, and that we are here face to face with a eugenic problem of enormous but unknown dimensions.

Since it is only the utterly ignorant who doubt the disastrous effects of venereal diseases, and especially of syphilis, on the children of the diseased, it becomes therefore a matter of considerable eugenic importance to enquire whether the congenitally diseased syphilitic parent does also pass his troubles to the third and following generations. According to the Report of the Royal Commission, few such "instances have been recorded; but there is reason to believe that fuller investigation

might prove that the third generation may not invariably escape from congenital taint" (Report, p. 30); a singularly guarded statement the truth of which very few will wish to controvert if taken literally. What we want to know in the first place, in order to decide the point at issue, is whether the percentage of cases of congenital syphilitic symptoms appearing in the third generation is greater than can be accounted for by unrecognised fresh syphilitic infection having occurred in the second generation; and no such systematic enquiry has, as far as I know, ever been made. Any attempt to estimate the probability of congenital syphilitic patients being infected again with this disease would, it must be admitted, be rendered very difficult by the fact, as I understand it is generally held to be, that patients in whom the spirochæte, the germ of syphilis, is actually existing in a living condition, are free from the risks of infection. In, at all events, nearly all cases of congenital syphilis, the spirochæte is found in great numbers inhabiting the body of the patient if he be examined when young, though later in life all these living germs may be exterminated and infection may become possible. What we want to know is, therefore, whether the congenital syphilitic patient is ever wholly free from the presence of the living spirochæte during all his life, natal and pre-natal; for in all cases where this living intruder originally existed in the body of the patient, its presence in the past forms the most probable explanation of the syphilitic symptoms even when it is no longer present. Until it is proved that congenital syphilitic patients may have been always free from the presence of the living spirochæte, will not the transfer of the living germ from the mother to the child remain as the most probable explanation of the "inheritance" of the symptoms of this disease beyond the first generation? If this transfer of the germ should prove to be the true explanation of the symptoms of congenital syphilis appearing in the second and third generations, should we not expect that the extermination of the spirochæte in the body of the mother would result in these symptoms being no longer "heritable"? In fact, all that we are now justified in concluding, I hold, is that, as far as facts are concerned, the problem of venereal disease as a racial poison is unsolved.

In the absence of facts it becomes, therefore, both legitimate and interesting to consider this question in a purely theoretical manner, or to enquire what are the probabilities of the case if it be judged by analogy with conclusions already generally accepted in other fields of research. When the racial poison of syphilis is spoken of, two somewhat distinct conceptions may be intended to be conveyed. It may be held that the symptoms of syphilis, acquired and congenital (which in some degree resemble each other), are passed on to subsequent generations for an indefinite period; or, on the other hand, it may be held that the disease produces a tendency to general racial degeneracy, or to an indefinable deterioration in the nation in the future. Putting aside these indefinable tendencies for later consideration, and dealing only with definite syphilitic symptoms, we have, in the first place, to enquire whether the unquestionable transmission of defects from diseased parents to their offspring is a process akin to natural inheritance, or whether it should be described as, or likened to a diseased ovum passing on its disease to the product of that ovum.

If the transmission of the evil effects of syphilis to the offspring of the diseased were a process akin to natural inheritance, then we should expect to find that it was transmitted from the father exactly as often as from the mother; for sex-limited inheritance need hardly be considered. But, according to the Report of the Royal Commission, the disease "may possibly be inherited from a diseased father directly" without the mother being obviously diseased, though this "is a point which is disputed by some authorities"; and from this it may at all events be inferred that though the origin of the trouble is doubtless more often traceable to the father, yet the actual transmission of the taint more often comes through the mother. Then again, if this transmission was really a case of true natural inheritance, we should expect to find that the children of a diseased parent would show the symptoms of the disease to about half the extent on an average to which they were visible in that parent; that is, if we judge by analogy with the statistical results obtained by Professor Pearson in his numerous enquiries into the facts of natural inheritance. No such quantitative relation-

ship, however, exists between the visible signs of acquired and congenital syphilis (Report, p. 29). Lastly, if the disease is cured, before parenthood, in the parent, it appears to be universally held that it will not reappear in the offspring, and to such a change in results there is no counterpart in natural inheritance. In fact, the analogy between the transmission of this disease from parent to child and the transmission of human characteristics by natural inheritance breaks down all along the line, and this analogy cannot therefore be adduced as giving any ground whatever for believing that the symptoms of this disease will be inherited from a congenitally diseased parent. The process of the transmission of this disease to the offspring is, in fact, more akin to pathological infection than to natural inheritance.

It may be urged in reply that though no one supposes that we are here dealing with ordinary natural inheritance, yet, whatever the process of transmission may be, the mere fact that the symptoms are passed on from the first to the second generation affords grounds for believing that they will also be passed on from the second generation to subsequent generations. But it is generally held, as has been already remarked, that if the disease is cured before the period of parenthood, it will not reappear in the offspring, and if we are to judge of what is likely to occur in subsequent generations merely by analogy with this primary transmission, this fact must not be overlooked. Amongst the congenitally diseased offspring who survive, the tendency on the whole seems to be for the symptoms to die out or to become less acute after the fifteenth or the twentieth year (Report, p. 30), and therefore, judging by analogy, we should expect to find that these symptoms would either not be passed on at all to the third generation, or, if passed on, that they would become less and less acute as the generations succeeded each other and thus would die out in time. In any case, judging by this analogy, those of us who have no congenital syphilitic symptoms, although we are almost certain to have had venereally diseased ancestors, have no reason to fear that the sins of our distant progenitors will be visited on our immediate or remote descendants. In fact, we again come to the conclusion

that if syphilis does act as a racial poison, the process by which this poison is transmitted to posterity must be different from the process by which the congenitally diseased child receives this accursed infliction from its parent.

This question may also be regarded from the theoretical Mendelian point of view, and a racial poison may be defined as any factor which injuriously affects the germ-plasm in such a manner as to cause a harmful "mutation," a mutation being a change in the characters or qualities of the offspring as compared with those of its ancestors, a change which is passed on to subsequent generations through the agency of natural inheritance. But where and when does this change originate—in the germ-plasm of the parent who has acquired the disease, or after the formation of the offspring destined to be congenitally diseased? If it takes place in the diseased parent, then, in order to account for the, at all events, more frequent inheritance of congenital disease from the mother, we must assume that mutations rarely, if ever, take place in the paternal germ-plasm; whereas there seems to be no reason to suppose that the maternal germ-plasm is the less stable of the two. Again, whether this change originates in a parent suffering from acquired syphilis, or in his congenital syphilitic offspring, we must assume that a cause which produced certain symptoms in the body acting as the host of the germ-plasm might also produce such a change in the nature of that germ-plasm itself that out of it would spring an individual exhibiting the same symptoms as those independently produced in the parent; and this is an assumption that those who disbelieve in the inheritance of acquired characters will not readily admit to be possible. Lastly, in order to account for the fact that congenital syphilitic symptoms are at all events rarely passed on to the next generation, it must be assumed that the mutation is recessive in character. But if venereal disease does cause such mutations, the number of individuals carrying this hidden but enduring evil factor must have been continually increasing during the 500 years or so in which the nation has been subject to the scourge, and there should, therefore, have been a steadily increasing number of cases of congenital syphilitic symptoms showing themselves

without any apparent cause; and of such a national deterioration we have no proof. In fact, in view of all the facts of the case, it is difficult to make the Mendelian theory of inheritance give support to the belief that venereal diseases act as racial poison in the sense in which the term is here used.

Possibly it may be said that the belief in the inheritance of acquired characters is by no means an extinct creed, and that at all events its adherents must admit that venereal diseases have harmful racial effects. No one would, however, I imagine, claim that the appearance of congenital syphilitic symptoms in a child is due to the inheritance of the actual symptoms as they appeared in the diseased parent; for if this were the case, whilst the disease would be recognised in both generations by the ordinary methods of diagnosis, there would also be some correlation between the peculiarities in the syphilitic symptoms as visible in the parents and in the children; and of this there is no proof. It must, therefore, be admitted that any belief that congenital syphilitic symptoms are transmitted to future generations by this method of inheritance must be founded, as far as facts are concerned, on the exceedingly slender array of the instances of transmissions to the third generation now on record. As to any theoretical basis on which to found a belief in the inheritance of the symptoms acquired by syphilis, it seems to me that it would be precisely equally valid as regards the transmission to posterity of the pathological effects of all other diseases. It can, in my opinion, only now be said that since certain facts are still best explained by the inheritance of acquired characters, the possibility that slow injurious racial effects do thus result from ailments of various kinds, must not be wholly neglected, and that the cure of every disease, venereal diseases included, may possibly be eugenic in its tendencies.

Finally, we have to consider the possibility of these diseases causing a general but indefinable deterioration of the race. But are we not completely in the dark as regards such speculations, at all events, beyond the third generation, whether we look to facts or to theory? Are not such blind gropings as likely to be harmful as useful? May not even those who are pursuing that objectionable sport, the pursuit of arguments to bolster up



preconceived opinions, be disappointed in their captures? For example, we have no grounds, as far as I can see, for presuming that mutations showing themselves in such unrecognisable effects in future generations, would be of such a nature that the cure in the parents, before parenthood, of the disease likely to cause them would prevent them from ever taking place; and the eugenicist, who had succeeded in persuading himself on insufficient grounds that venereal diseases are slowly deteriorating the race, might be discouraged from joining in the campaign to stamp them out by the doubts he might in consequence be led to feel as to whether by curing them, and by thus increasing the number of the progeny of those who had suffered from them, he might not be injuring his race.

In short, in view of all these considerations, and until we have further facts to guide us, ought we not to regard it as an entirely open question whether in attacking venereal disease *merely as a racial poison*, we are dealing with a "eugenic" question in the Galtonian sense of the word? Anyhow, whatever we do we must not try to force facts into a mould of a particular shape in order to make them useful in building up a propaganda for a cause, however good.

Passing on to consider the racial selective effects of venereal diseases, what we want to know is whether they affect the rate of multiplication of the fit and the unfit indiscriminately or selectively. Looking to the population as a whole, these diseases seem to affect the thoughtless and the immoral to a somewhat greater extent than the prudent and the wise; whilst their sterilising effects on prostitutes, especially in view of the very high proportion of the feeble-minded in their ranks, probably have eugenic results. Then as to the different classes of the community, judging by the recorded death-rates—not a very reliable indication—unskilled labour is more affected than skilled labour, whilst the upper and middle classes, and those below them but more highly paid than the skilled labourer, are more affected than skilled labour, textile workers, miners, and agricultural labourers. It is, indeed, now almost impossible to estimate the combined racial effect of all these conflicting influences, and I can only give my own hesitating impression that

venereal diseases are now on the whole producing harmful selective effects.

Even if it should prove to be true that the direct harmful results of these diseases do die out in the course of three or more generations, yet certain eugenic advantages, beside those dependent on their harmful selective effect, would be likely to result from the campaign against them. In the first place, congenital syphilis appears to manifest itself in many ways, including lunacy, feeble-mindedness, epilepsy, blindness, deafness, etc. Now as to deafness, to take that as an example, if an increase in a natural tendency to deafness is not passed on to posterity by natural inheritance as the result of syphilitic deafness, as we are now assuming, then the effect of the existence of deafness as a form of congenital syphilis is to make the disease as a whole appear less heritable than the ordinary disease really is. If we could altogether destroy the spirochæte, or extirpate the disease entirely in some other way, and thus stamp out the resulting deafness in the next generation, we should then in future more readily realise the necessity for endeavouring to eradicate true inherited deafness by the discouragement of parenthood amongst congenitally deaf patients. This is but an example of the general law that to prevent environment from having immediate harmful effects on the nation generally makes the task of the eugenic reformer easier by causing harmful hereditary influences to become more easily recognisable.

Another beneficial effect of the campaign against venereal diseases will be the habit of mind thus engendered of considering the responsibilities incurred by parents with regard to the defects likely to be transmitted to their offspring. Not one person in a thousand will appreciate the distinction between undesirable qualities passed on to future generations by natural inheritance and pathological defects transmitted to subsequent generations by a process akin to infection; and the efforts now being made to safeguard the unborn against all the grievous congenital ailments, including blindness, which result from existing venereal diseases, are likely to direct popular attention to many undeniably eugenic problems in spite of the wide

theoretical differences which may exist between the problems involved. We have, therefore, good reason to hope that definite eugenic advantages will result from this movement, whatever may be the verdict of the future in regard to the racial poison problem; and there is, indeed, only one note of warning which the eugenicist feels compelled to sound in connection with this campaign. Those who share in the doubts here expressed as to the enduring harmful effects of existing venereal diseases on the generations of the more distant future must agree that we have no certain proof that the campaign against these diseases will produce any beneficial *evolutionary* changes in the race; and, as the aim of the eugenicist as such is to promote progress of this type, he ought not to rest content unless coincidentally with his attack on venereal diseases, he is directing his main eugenic efforts towards the introduction of many other reforms with definite eugenic objects in view. Those who believe that syphilis does act as a racial poison will, from their point of view, rightly regard this campaign as an integral part of the eugenic programme, and it should be clearly understood that the doubts here expressed as to the truth of that view are uttered with the object of stimulating discussion as the only means of ensuring that the truth will ultimately emerge and certainly not as indicating a fixed or dogmatic disbelief in the harmful racial effects of these diseases. In conclusion, let it be once again asserted that whatever may be the results of such a discussion, we may be sure that nothing will arise out of it which will in the least shake our determination to fight against these accursed diseases with every weapon at our command.

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